CLAIMS

What is claimed is:

1. A method of assessing the viability of a spore after a sterilization treatment, comprising:

(a) exposing a spore to a sterilization treatment;

(b) examining the treated spore using multiangle light scattering; and

(c) evaluating a difference between the multiangle light scattering of the treated spore and a multiangle light scattering of a like spore not exposed to a sterilization treatment to evaluate a change in spore morphology to determine whether the treated spore is viable.

2. The method of claim 11, wherein the spore and the like spore are selected from the group consisting of a *B. subtilis* spore, and a *B. stearothermophilus* spore.

3. The spore of claim 12, wherein the spore and the like spore are *B. subtilis*.

4. The spore of claim 12, wherein the spore and the like spore are *B. stearothermophilus*.

5. The method of claim 11, wherein the sterilization treatment is selected from the group consisting of a chemical sterilization treatment, and a physical sterilization treatment.

6. The method of claim 15, wherein the chemical sterilization treatment is selected from the group consisting of an ethylene oxide sterilization treatment, a hydrogen peroxide sterilization treatment, a tetrasilver tetraoxide sterilization treatment, and an ozone sterilization treatment.

7. The method of claim 15, wherein the physical sterilization treatment is selected from the group consisting of a radiation sterilization treatment, a gas plasma sterilization treatment, a steam sterilization treatment, and a dry heat sterilization treatment.

8. The method of claim 11, further comprising examining the like spore using multiangle light scattering prior to the sterilization treatment of the spore in step (a) to provide a standard multiple light scattering data set for use as the multiangle light scattering of the like spore in step (c).

9. The method of claim 18, further comprising storing the standard multiangle light scattering data to assess viability of a second like spore after sterilizing the second like spore using the sterilization treatment of step (a).

10. The method of claim 11, further comprising incubating the treated spore with a growth medium prior to step (b).

11. The method of claim 20, wherein the growth medium is selected from the group consisting of trypticase soy broth, nutrient broth, and brain heart infusion broth.

12. The method of claim 20, further comprising incubating the spore up to about 24 hours prior to step (b).

13. The method of claim 20, further comprising heat-shocking the treated spore prior to incubating the treated spore with the growth medium.

14. The method of claim 11, wherein the sterilization treatment is selected from the group consisting of a steam sterilization treatment, and an ozone sterilization treatment, and the method further comprises examining the treated spore directly after the sterilization treatment.

15. A kit for assessing the viability of a spore after a sterilization treatment, the kit comprising about 2×10^8 spores absorbed onto a solid support, a multiangle

light scattering photometer, and a liquid medium, and instructional material for determining the viability of the spore by evaluating a change in spore morphology.

16. The kit of claim 37, further comprising an instructional material for the use of the kit.

17. The kit of claim 37, wherein the liquid medium is water.

18. A method of determining the effectiveness of a sterilization treatment comprising:

(a) exposing a spore to the sterilization treatment;

(b) examining the morphology of the treated spore using multiangle light scattering; and

(c) evaluating a difference between the morphology of the treated spore and the morphology of a like spore not exposed to a sterilization treatment, to determine whether the treated spore is viable.